

**REMARKS**

Claims 5-7, 9, 10, 15-17 and 19-21 are pending in the present application. Reconsideration of the claims is respectfully requested.

**I. 35 U.S.C. § 102, Anticipation**

The Office Action rejects claims 5-7, 9-10, 15-17, 19-21 under 35 U.S.C. § 102 as being anticipated by *Gill* (U.S. Patent No. 5,751,521). This rejection is respectfully traversed.

With respect to claim 5, the Office Action states:

Regarding claims 5 and 15, *Gill* discloses a reduced sensitivity spin valve sensor apparatus (figure 6), comprising:  
at least one magnetically fixed layer 162; and  
at least two free layers 158, 164;  
wherein the at least one magnetically fixed layer includes at least two magnetically fixed layers 162, 156, and wherein the at least two free layers are positioned between the at least two fixed layers; and  
wherein the at least two magnetically fixed layers have a parallel magnetic orientation (see orientation 168, 172).

Office Action, dated June 9, 2004. Applicant respectfully disagrees. *Gill* teaches a read head with two spin valve sensors 130 and 132. Each spin valve sensor has one magnetically fixed (pinned) layer and two free layers. For example, spin valve sensor 130 includes pinned layer 156 and free layers 176 and 178. Spin valve sensor 132 includes pinned layer 162 and free layers 182 and 184. Insulation layer 134 separates the two spin valve sensors. *Gill* states:

Accordingly, when the spin valve read head 52 is subjected to a magnetic field of one polarity, the spin valve sensor 130 will produce a response signal of one polarity and the spin valve sensor 132 will produce a second signal of opposite polarity. The response signals are 180° out of phase with respect to one another and are differentially detected by the differential amplifier 144 which combines the response signals to produce an enhanced response signal free of the noise picked up by the sensors due to common mode noise rejection. The laminated free layers 158 and 164 are described in a commonly assigned U. S. Pat. No. 5,408,377. With the present invention the antiferromagnetic layers 166 and 170 can be constructed of

the same material and simultaneously set in their magnetic orientations during fabrication.

*Gill*, col. 8, lines 31-45. Thus, *Gill* teaches that the read heads are separated by an insulation layer so that the spin valve sensors produce independent response signals that are 180° out of phase.

In contradistinction, the present invention provides a spin valve sensor that includes two magnetically fixed layers. *Gill* does not teach a single spin valve sensor that includes two magnetically fixed layers, as recited in claim 5. The applied reference does not teach or fairly suggest each and every claim limitation; therefore, *Gill* does not anticipate claim 5. Independent claims 15 and 21 recite subject matter addressed above with respect to claim 5 and are allowable for the same reasons. Since claims 6, 7, 9, 10, 16, 17, 19, and 20 depend from claims 5 and 15, the same distinctions between *Gill* and the invention recited in claims 5 and 15 apply for these claims. Additionally, claims 6, 7, 9, 10, 16, 17, 19, and 20 recite other additional combinations of features not suggested by the reference.

More particularly, with respect to claims 10 and 20, the Office Action states:

Regarding claims 10 and 20, it is evident from the reference to *Gill* that the magnetic flux is distributed across the at least two free layers to thereby reduce a magnetic flux fed to each free layer (see Figure 6).

Office Action, dated June 9, 2004. Applicant respectfully disagrees. *Gill* teaches two separate spin valve sensors that include two free layers. Each spin valve sensor includes free layers that are antiparallel in magnetic orientation. The purpose of this is only for determining a differential signal based on the two separate spin valve sensors. As stated above, the response signals of the two spin valve sensors will be 180° out of phase. Thus, the differential produce an enhanced response signal, rather than a reduced response signal, as in the claimed invention. Therefore, *Gill* does not teach or fairly suggest that the magnetic flux is distributed across the at least two free layers to reduce a magnetic flux fed to each layer, as recited in claims 10 and 10.

Therefore, Applicant respectfully requests withdrawal of the rejection of claims 5-7, 9-10, 15-17, 19-21 under 35 U.S.C. § 102.

Furthermore, *Gill* does not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. *Gill* actually teaches away from the presently claimed invention because it teaches an enhanced response signal, as opposed to a reduced sensitivity spin valve sensor, as in the presently claimed invention. Absent the examiner pointing out some teaching or incentive to implement *Gill* to reduce the sensitivity of a spin valve sensor by distributing a magnetic flux across two free layers, one of ordinary skill in the art would not be led to modify *Gill* to reach the present invention when the reference is examined as a whole. Absent some teaching, suggestion, or incentive to modify *Gill* in this manner, the presently claimed invention can be reached only through an improper use of hindsight using the Applicant's disclosure as a template to make the necessary changes to reach the claimed invention.

## II. Conclusion

It is respectfully urged that the subject application is patentable over the prior art of record and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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